WHAT IS CLAIMED IS:

1. An apparatus for transmitting video data across a network, comprising:

a video input that receives a video signal;

a video predictive coding module coupled to the video input, wherein the video predictive coding module performs video predictive coding on the video signal in real time to create a video predictive coded signal; and

a network interface coupled to the video predictive coding module and coupled to the network, wherein the network interface transmits the video predictive coded signal across the network concurrently with the video predictive coding module performing video predictive coding in real time.

2. The apparatus for transmitting video data according to claim 2, wherein the network comprises at least one of a Fast Ethernet network and an Ethernet network faster than Fast Ethernet and the video signal comprises at least one of a composite and digital video signal.

3. The apparatus for transmitting video data according to claim 1, wherein the video predictive coding module comprises:

a delay module coupled to the video input; and

a subtraction module coupled to the delay module, wherein the subtraction module subtracts a subsequent line of the video signal from a delayed line of the video signal.

4. The apparatus for transmitting video data according to claim 3, wherein the delay module comprises a line buffer and wherein the line buffer delays a line of the video signal to create the delayed line of the video signal.

5. The apparatus for transmitting video data according to claim 1, further comprising a timing control module coupled to the video input and coupled to the video predictive

coding module, wherein the timing control module controls the timing of the video predictive coding module.

6. The apparatus for transmitting video data according to claim 1, further comprising a channel allocation module, wherein the channel allocation module reserves a channel of the Ethernet network for transmitting the video predictive coded signal according to the priority of the video predictive coded signal.

7. The apparatus for transmitting video data according to claim 1, further comprising an analog to digital converter, wherein the video signal comprises a digitized video signal and the analog to digital converter converts an input video signal into the digitized video signal.

8. The apparatus for transmitting video data according to claim 1, wherein the video predictive coded signal comprises at least one line comprising a plurality of pixels.

9. An apparatus for receiving video data, comprising:

a network interface that receives a video predictive coded signal from a network;

a video predictive decoding module coupled to the network interface, wherein the video predictive decoding module performs video predictive decoding on the video predictive coded signal in real time to create a video predictive decoded signal; and

a video output coupled to the video predictive decoding module, wherein the video output outputs the video predictive decoded signal in real time.

10. The apparatus for receiving video data according to claim 9, wherein the network comprises at least one of a Fast Ethernet and higher network and the video signal comprises at least one of a composite and digital video signal.

11. The apparatus for receiving video data according to claim 9, wherein the video predictive decoding module comprises:

a subtraction module coupled to the network interface; and

a delay module coupled to the subtraction module, wherein the subtraction module subtracts a subsequent line of the video predictive coded signal from a line of the video predictive decoded signal delayed by the delay module.

12. The apparatus for receiving video data according to claim 11, wherein the delay module comprises a line buffer and wherein the line buffer delays a line of the video predictive decoded signal to create a delayed line of the video predictive decoded signal.

13. The apparatus for receiving video data according to claim 9, further comprising a timing control module coupled to the video output and coupled to the video predictive decoding module, wherein the timing control module controls the timing of the video output.

14. The apparatus for receiving video data according to claim 13, wherein the timing control module comprises:

a clock generation module coupled to the video predictive decoding module; and

a memory control module coupled to the video predictive decoding module.

15. The apparatus for receiving video data according to claim 9, further comprising a channel allocation module, wherein the channel allocation module reserves a channel of the Ethernet network for transmitting the video predictive coded signal according to the priority of the video predictive coded signal.

16. The apparatus for receiving video data according to claim 9, further comprising a digital to analog converter, wherein the digital to analog converter converts the video predictive decoded signal into an output video signal.

17. The apparatus for receiving video data according to claim 9, wherein the video predictive coded signal comprises at least one line comprising a plurality of pixels.

18. A method of transmitting multimedia data over a network comprising:

receiving a multimedia signal;

performing video predictive coding on the multimedia signal to create a video predictive coded multimedia signal; and

transmitting the video predictive coded multimedia signal over the network substantially concurrently with the performing step.

19. The method according to claim 18, wherein the network comprises at least one of a Fast Ethernet network and an Ethernet network faster than Fast Ethernet and the multimedia signal comprises at least one of a composite and a digital video signal.

20. The method according to claim 19, further comprising:

reserving a portion of an Ethernet bandwidth for channel allocation;

assigning a channel allocation priority to the composite video signal; and

reserving a channel path for the composite video signal.

21. The method according to claim 19, wherein the performing step further comprises:

delaying first line of the composite video signal; and

subtracting a second line of the composite video signal from the first line of the composite video signal to create the video predictive coded video signal.

22. The method according to claim 18, further comprising extracting a synchronization signal from the multimedia signal, wherein the performing step performs video predictive coding in synchronization with the synchronization signal.

23. The method according to claim 18, further comprising:

extracting a synchronization signal from the multimedia signal;

converting the multimedia signal from analog to digital in synchronization with the synchronization signal to create a digital multimedia signal; and

buffering the digital multimedia signal in synchronization with the synchronization signal.

24. The method according to claim 18, wherein the performing step creates a video predictive coded multimedia signal represented by half the number of sampling bits of the multimedia signal.

25. A method of receiving multimedia data from a network comprising:

receiving a video predictive coded multimedia signal from the network;

performing video predictive decoding on the video predictive coded multimedia signal to create a multimedia signal; and

outputting the multimedia signal substantially concurrently with the performing step.

26. The method according to claim 25, wherein the network comprises at least one of a Fast Ethernet network and an Ethernet network faster than Fast Ethernet and the multimedia signal comprises a composite video signal.

27. The method according to claim 26, wherein the receiving step further comprises receiving the video predictive coded multimedia signal from a reserved channel path of the Ethernet network.

28. The method according to claim 25, wherein the performing step further comprises:

delaying a first line of a video predictive decoded multimedia signal; and

subtracting a second line of the video predictive coded multimedia signal from the delayed first line of the video predictive decoded multimedia signal to create the multimedia signal.

29. The method according to claim 25, further comprising extracting a synchronization signal from the video predictive coded multimedia signal, wherein the outputting step outputs the multimedia signal in synchronization with the synchronization signal.

30. The method according to claim 25, further comprising:

extracting a synchronization signal while performing the video predictive decoding;

buffering the multimedia signal in synchronization with the synchronization signal; and

converting the multimedia signal from digital to analog in synchronization with the synchronization signal.

31. The method according to claim 25, wherein the receiving step receives a video predictive coded multimedia signal.

32. A method of transmitting and switching multimedia data over a network comprising:

setting a portion of an Ethernet bandwidth for channel allocation;

receiving a multimedia signal that has an assigned channel allocation priority; and

reserving a channel path for the multimedia signal.

33. The method according to claim 32, wherein the network comprises at least one of a Fast Ethernet network and an Ethernet network faster than Fast Ethernet.

34. The method according to claim 32, wherein the reserving step further comprises reserving a very small portion of the Ethernet bandwidth for channel allocation.

35. The method according to claim 32, further comprising:

receiving a second signal; and

delaying the second signal.

36. The method according to claim 32, further comprising:
receiving a second multimedia signal;
overriding the reserved channel path; and
reserving a channel path for the second multimedia signal.

37. The method according to claim 32, wherein the receiving step further comprises receiving a packet, the packet including a header addressed to a master switch, and a payload including channel allocation priority data.

38. The method according to claim 32, wherein the multimedia signal comprises a video predictive coded video signal.

39. A method of transmitting and switching multimedia data over at least one of a Fast Ethernet network and an Ethernet network faster than Fast Ethernet comprising:
allocating a portion of an Ethernet bandwidth for channel allocation;
receiving a multimedia signal;
assigning a channel allocation priority to the multimedia signal;
transmitting data including the channel allocation priority in the allocated portion of the Ethernet bandwidth;
performing video predictive coding on the multimedia signal to create a video predictive coded multimedia signal; and
transmitting the video predictive coded multimedia signal over the network in real time.

40. The method according to claim 39, wherein the multimedia signal comprises at least one of a composite and a digital video signal.

41. The method according to claim 39, wherein the transmitting step further comprises transmitting a data packet including a header and a payload, wherein the

header includes the address of a master switch and the payload includes the channel allocation priority.

42. The method according to claim 39, wherein the performing step further comprises:

delaying a first line of the multimedia signal; and

subtracting a second line of the multimedia signal from the delayed first line of the multimedia signal to create the video predictive coded multimedia signal.

43. The method according to claim 39, further comprising:

receiving a video predictive coded multimedia signal from the network;

performing video predictive decoding on the video predictive coded multimedia signal to create a multimedia signal; and

outputting the multimedia signal substantially concurrently with the performing step.

44. An access device comprising:

a coding module that performs predictive coding;

a decoding module that performs predictive decoding; and

an allocation module that reserves a path across a network.